

Contribution to the understanding of biologic concentrations of metals in the newborns in an urban area from Rio de Janeiro, Brazil

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Background/Aim:

Environmental exposure to heavy metals in urban areas has been associated with adverse birth outcomes such as spontaneous abortion, stillbirth, preterm birth, low birth weight, small for gestational age birth, and lower head circumference. To evaluate prenatal exposure and to test viability for a birth cohort study, a pilot study was conducted in newborns at the School Maternity of the Federal University of Rio de Janeiro (ME-UFRJ).

The aim of this study is to evaluate exposure to metals of interest to Public Health (Lead, Mercury, Arsenic and Cadmium) in newborns in an urban area.

Methods: During the months of October and November of 2017, all pregnant women attended at ME-UFRJ, over 16 years of age, were invited to participate in the project. Were collected 1) socioeconomic, cultural, leisure and living conditions of the parents 2) Maternal biological samples (blood, urine and hair) 3) Cord blood, anthropometric data, APGAR and urine of the newborn.

Results: Of the 209 pregnant women attended, 142 accepted to participate (67.9%), 4 of whom were twin pregnancies (2.8%). From October / 2017 to February / 2018, there were 131 births (92.3%), and cord blood was collected from 122 births (85.9%).

Expected results: the data analysis and the laboratory results will be available in May 2018 and will be presented at the conference

Conclusion: This study may contribute to the increase of knowledge regarding exposure to metals, and its predisposing factors or conditions, of newborn in an urban area in Brazil.